

WHAT IS CLAIMED IS:

1. A bonding system comprising:

a processing unit which processes surfaces of first and second substrates;

5 an operation unit which overlays the first and second substrates processed by said processing unit; and

a chamber which accommodates and isolates from an outer space said processing unit and operation unit,

10 wherein a process for the first and second substrates by said processing unit includes a process of cleaning and/or activating the surfaces of the first and second substrates.

2. The system according to claim 1, further comprising a filter, wherein an interior of said chamber is cleaned by said filter.

3. The system according to claim 1, further comprising a loader connected to said chamber, said loader including a mechanism which purges an atmosphere in said chamber.

4. The system according to claim 1, further comprising a mechanism which increases a pressure in said chamber to be higher than that outside said chamber.

25 5. The system according to claim 1, wherein the process for the first and second substrates by said processing unit includes a process of removing a

moisture on the surfaces of the first and second substrates to a predetermined level.

6. The system according to claim 1, wherein the process for the first and second substrates by said
5 processing unit includes a process of removing a moisture on the surfaces of the first and second substrates to a predetermined level and thereafter setting the moisture on the surfaces to a predetermined level so that a bonding strength of the first and
10 second substrates increases.

7. The system according to claim 1, wherein said processing unit comprises a mechanism which removes a particle on the surfaces of the first and second substrates.

15 8. The system according to claim 1, wherein said processing unit comprises a mechanism which removes an organic substance on the surfaces of the first and second substrates.

9. The system according to claim 1, wherein said
20 processing unit comprises a mechanism which sets an activation state of the surfaces of the first and second substrate to a predetermined state.

10. The system according to claim 9, wherein said processing unit comprises a mechanism which activates
25 the surfaces of the first and second substrates so that a bonding strength of the first and second substrates increases..

11. A bonding system comprising:

an operation unit which overlays first and second substrates;

a chamber which accommodates said operation unit
5 and isolates said operation unit from an outer space;
and

a humidity maintaining unit which maintains a humidity in said chamber to a substantially constant level.

10 12. A bonding system comprising:

a measurement unit which measures a state of surfaces of first and second substrates;

a processing unit which processes the surfaces of the first and second substrates on the basis of a
15 measurement result of said measurement unit;

an operation unit which overlays the first and second substrates processed by said processing unit;
and

a chamber which accommodates said measurement
20 unit, processing unit, and operation unit and isolates from an outer space,

wherein a process for the first and second substrates by said processing unit includes a process of cleaning the surfaces of the first and second
25 substrates.

13. The system according to claim 12, further comprising a determination unit which checks whether or

not the measurement result of said measurement unit is within a predetermined range, wherein the process by said processing unit is performed when said determination unit determines that the measurement
5 result is not within the predetermined range.

14. The system according to claim 12, further comprising a filter, wherein an interior of said chamber is cleaned by said filter.

15. The system according to claim 12, further
10 comprising a loader connected to said chamber, said loader including a mechanism which purges an atmosphere in said chamber.

16. The system according to claim 12, further comprising a mechanism which increases a pressure in
15 said chamber to be higher than that outside said chamber.

17. The system according to claim 12, wherein said processing unit comprises a mechanism which removes a particle on the surfaces of the first and second
20 substrates.

18. The system according to claim 12, wherein said processing unit comprises a mechanism which removes an organic substance on the surfaces of the first and second substrates.

25 19. The system according to claim 12, wherein said processing unit comprises a mechanism which activates the surfaces of the first and second substrates so that

a bonding strength of the first and second substrates increases.

20. The system according to claim 12, wherein the process for the first and second substrates by said
5 processing unit includes a process of setting a moisture on the surfaces of the first and second substrates to a predetermined level so that a bonding strength of the first and second substrates increases.

21. The system according to claim 12, further
10 comprising a humidity maintaining unit which maintains a humidity in said chamber to a substantially constant level.

22. A semiconductor substrate manufacturing method comprising steps of:

- 15 forming a porous layer on a substrate;
 forming a layer to be transferred on the porous layer;
 bonding the substrate with another substrate by utilizing the bonding system according to claim 1,
20 thereby fabricating a bonded substrate stack; and
 separating the bonded substrate stack at a portion of the porous layer.